AMATEUR SATELLITE REPORT

Number 174
May 7, 1988

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AMSAT® NA *Newsletter for the Amateur Radio Space Program*

Amateur Satellite Report is endorsed by the American Radio Relay League as the special interest Newsletter serving the Amateur Radio Satellite Community

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Phase 3C Launch Preps On Sked

Late reports direct form Kourou indicate all is well with preparations for the launch of Phase 3C on or about June 1. The spacecraft has been tested at the launch site and, after a few minor bugs were remedied, is now ready for the launch.

According to Jan King, W3GEY, AMSAT NA's team leader in Kourou, the spacecraft is in good condition following complete check out of all its systems. Jan says all the electrical systems were checked out, the transponders were performing as expected, the attitude control and power systems are nominal and the solar arrays have been cleaned and prepared for flight. In addition, the thermal blankets and thermal coatings have been applied to the spacecraft. The spacecraft was "closed out" on Tuesday, April 12. That means that all preparations except fueling were completed.

Elements of the second team arrived on April 9 for the actual fueling operations. The fueling was accomplished by Dick Daniels and Dick Sunderland of AMSAT NA and by Wolfgang Mueller of AMSAT DL. The team completed the fueling ahead of schedule and at press time were preparing to return home early to conserve travel funds. According to King, preparations of Phase 3C are following the planned time line perfectly and the atmosphere is relaxed and professional among the team staffs.

The first elements of the third team were being readied for deployment to Kourou at press time. The task of the third team is to participate in integrating the spacecraft into the launcher itself. Then, when this is done, they will monitor the spacecraft condition via the telemetry links to assure all systems are functioning normally right up through launch time.

There are two launch windows for the mission if it launches on June 1. The first is 1110 to 1146 hours UTC while the second is from 1300 to 1440 UTC. Both windows are for morning launches. There is some softness in the June 1 launch schedule AMSAT has learned, however. If the launch slips to later in June, the windows may move to an evening launch. King said AMSAT should have a better understanding of the launch date later in April. He also mentioned the designation of the launch has been re-asserted as V-22. That yields the possibility of an out-of-sequence launch since the Intelsat launch scheduled for May 11 is being called V-23 while the June 1 launch is being called V-22.

With the launch countdown finally closing in on day-zero, expectations are high in AMSAT circles and in the Amateur Radio community at large that they are about to witness the birth of the most powerful OSCAR to date. Many have already prepared their Mode JL stations for the new satellite. Mode JL is expected to dominate operating times since its performance will far exceed any other mode ever fielded. And as always, AMSAT membership helps support the program. Your donations are welcome.

Space Symposium Called "World Series"

The U.S. Space Foundation held its Fourth National Space Symposium in Colorado Springs from April 12 - 15 under the theme "A Call To Action, Space Challenge 88, Summit Meeting on Space". And a summit meeting it was with senior government policy makers, leading industrial, military and science figures on hand. It had been billed as the "World Series of Space Symposia" and judging by the attendees, it probably lived up to its billing. AMSAT played a minor role in the symposium overall but established both a presence and visibility that will be vital in dealing with policy making bodies in the future.

Featured speakers included NASA Administrator Dr. James C. Fletcher as well as former Administrator Dr. James M. Beggs. Dr. James Odom, NASA Associate Administrator for the Space Station was on hand as was a group of former astronauts including "Buzz" Aldrin (second man on the moon), Gene Cernan, Jim "Ox" Van Hoften and Deke Slayton. All participated in the symposium. High ranking civilian and military officers presented their views on the current challenges to the U.S. space effort.

"East-West Launch Competition" was the title of one session featuring a panel comprised of the Presidents of Arianespace, Martin Marietta Commercial Titan, McDonnell-Douglas Astronautics, Space Services Inc. as well as a representative of Glavcosmos, the Soviet launch authority. Representatives of NASDA and CNES, the national space agencies of Japan and France, respectively, also gave interesting talks. Japan will probably become a seller of launch capacity in a few years attendees were told.

A spirited debate evolved between proponents of SDI and

the system's detractors. One of the most frequently quoted opponents of SDI, John Pike, of the Federation of American Scientists, squared off against Lt. General Daniel Graham, retired head of Air Force Intelligence. Dr. Greg Canavan, one of the leading physicists working on SDI faced Dr. Satish Dhwan representing the World Peace Council in Helsinki. A particularly poignant note was added to the debate when the legendary Dr. Edward Teller appeared at the banquet to speak. Generally regarded as the individual who most inspired President Reagan to initiate his SDI program, Teller nevertheless addressed the need for a strong national space policy for reasons that went far beyond SDI.

In another session, *Aviation Week and Space Technology* Editor in Chief Donald E. Fink blasted the Reagan administration for its sluggish response in the area of national space policy. He said the recently articulated national policy statement was in effect "too little, too late."

A Space Law and Policy Forum featured the world's leading authorities on the subject. Mr. Gregg R. Fawkes, Director of Commercial Space Programs at the U.S. Department of Commerce, addressed the issue of export controls, a subject of vital interest to AMSAT in light of recent preliminary agreements that the Soviets will launch an AMSAT/SatelLife PACSAT from the Mir Space Station. The PACSAT may require an export license. Presently, satellites are categorized as munitions and are controlled tightly insofar as export is concerned.

The U.S. Space Foundation is vitally interested in space education and has several pilot projects under way. AMSAT is looking into ways it might combine its Space Education activities with those of the U.S. Space Foundation. Among its other missions, the Foundation seeks to instill an awareness in the public of the importance of a strong national commitment to space and to have that support reflected in Congressional budgets. The Foundation has commissioned a series of superb TV spot ads which drive home the benefits of space technology in terms of its spinoffs for everyday life. These spots were produced by Academy Award winning producer Doug Morrow. Once you've seen one you'll never forget it. They feature various "odd couples" such as Barry Goldwater and Jesse Jackson; Tip O'Neil and William F. Buckley; Willie Shoemaker and Kareem Abdul Jabaar; and more. The message? Despite sharp differences in some domains, each asserts space technology spinoffs are important and relevant to all of us.

AMSAT encourages TV viewers to ask their local stations to run these absolutely first rate spots sponsored by the Ad Council frequently and in favorable time slots. In this way AMSAT members can help build a stronger national space commitment through better public awareness. And a stronger national space commitment is what is needed if AMSAT is to fulfill some of its most basic objectives. Do your part today. Call or write your TV station and encourage the airing of the U.S. Space Foundation spot ads. You'll love them when you see them and your nation will be the better for it.

ALINS Plans For Phase 3C Launch Announced

by Ralph Wallio, WØRPK, AMSAT-NA VP of Operations

AMSAT-NA will provide a multi-function AMSAT Launch Information Network (ALINS) for the launch of Phase 3C. During the period just before, during and just after the launch, special information nets and bulletins will distribute last minute information.

The Arianespace launch schedule will control when specific nets and bulletins will be transmitted. This plan is based on a launch date of June 1 with two possible launch windows.

1st window: 11:10 - 11:46 UTC
2nd window: 13:00 - 14:40 UTC

The ALINS will be changed to track changes in the actual launch windows if (as) they occur. Monitor AMSAT nets closely to obtain the latest launch window announcements.

SPECIAL AMSAT-NA NETS AND NET FORMATS

North American AMSAT nets will operate on their normal schedules on Sunday, May 29th, Tuesday, May 31st, Sunday, June 5th and Tuesday, June 7th. These nets will emphasize discussion of the Phase 3C spacecraft and ground station operating requirements.

Special AMSAT-NA nets will be held on Wednesday, Thursday and Friday, June 1-3, at the usual times on 3840kHz. Last minute information will be available including orbital elements and plans for the first motor burn.

PRE- and POST-LAUNCH BULLETINS

Stations on the east and west coasts and W1AW will transmit last minute Phase 3C information during launch week. Involved stations and leadership include:

WA3NAN	Goddard Space Flight Center Greenbelt, MD Frank Bauer, KA3HDO, Group Leader
W6VIO	Jet Propulsion Laboratory Pasadena, CA Courtney Duncan, N5BF, Group Leader
W1AW	American Radio Relay League Newington, CT Chuck Bender, W1WPR, Chief Operator

The bulletin transmission schedule, based on a 01Jun88 launch, includes operations Tuesday, May 31st through Friday, June 3rd on the following schedule:

W1AW	Published W1AW bulletin schedule and frequencies (all modes)
WA3NAN	7,185 kHz - 14,295 kHz - 21,395 kHz 1600z beaming Europe 1610z beaming Africa
W6VIO	14,282 kHz - 21,280 kHz 2015z 20m beaming SW 2020z 20m beaming NW 2030z 15m beaming NW 2035z 15m beaming SW

LAUNCH TELECONFERENCE

A teleconference of launch information sources and transmit stations will be held from 30-minutes before the primary launch window opens till shutdown of the Ariane 4 third stage (approximately 20-minutes after liftoff). Please note the tranmitted teleconference will NOT stay on-the-

air for the one-hour delay before OSCAR-xx actually starts beacon transmission. (AMSAT-NA leadership will be in touch with AMSAT-SA operations intended to receive initial beacon transmissions. Results will be described in North America during the special evening 75m net cycle outlined above.)

The list of teleconference participants is growing as launch approaches. As of this date, this list includes:

NAME/FUNCTION	CALL	LOCATION	REMARKS
Vern Riportella	WA2LQQ	Warwick	Moderator
Jan King	W3GEY	Boulder	Info source
Ralph Wallio	WØRPK	Indianola	net control/hf+local xmsn
ARRL	W1AW	Newington	HF+local xmsn
Goddard SFC	WA3NAN	Greenbelt	Tracking/HF+local xmsn
JPL	W6VIO	Pasadena	HF+local xmsn
AMSAT-UK	G3RWL	Britain	Transmission
AMSAT-SA	ZS6AKV	South Africa	Transmission
Repeater outlet	KA7GZH	Salt Lake City	Receive only
Repeater outlet	N7RH	Reno	Receive only
Repeater outlet	KD9QB	Indianapolis	Receive only
Repeater outlet	N9GHZ	No. Central WI	Receive only

Transmit stations will be encouraged to start their nets one-hour before the launch window opens (30-minutes before the teleconference starts) to clear their frequencies and to provide preliminary information.

North American HF transmit frequencies will be as follows:

W1AW	Published voice bulletin frequencies for North American coverage
WA3NAN	3860 - 7185 - 14295 - 21395 - 147.45 Beaming east on 20m and 15m
W6VIO	14282 - 21280 - 3840 or 7165 - repeater network uplink. Beaming west on 20m and 15m
WØRPK	3840 and/or 7165 - repeater network uplink

Skitrek Progress Report #11: April 9

by Rich Ensign, N8IWJ, AMSAT NA Science Education Advisor

Our report on the Amateur Radio Supported Transpolar Skitrek Expedition this week comes from via packet radio from the Soviet Union. It was filed by Rick Burke, VO1SA, Portable UAØ, and was sent to his Soviet friends as he left the USSR. The message was recorded at the University of Surrey, England, and relayed to AMSAT. Rick spent a month in the Soviet Arctic as Canadian representative to the communications team supporting the expedition. His message reads:

QST FROM VO1SA/UAØ. MY NAME IS RICK. IT IS MY PLEASURE TO OPERATE FROM SREDNIY ISLAND. 79 DEG 33 MIN NORTH 90 DEG 13 MIN EAST. SREDNIY ISLAND IS PART OF (THE) SEVERNAYA ZEMLYA GROUP AND 627 NAUTICAL MILES FROM THE NORTH POLE. THIS SITE IS IN SUPPORT OF THE MOST NORTHERLY LARGE AIRPORT IN THE USSR.

(THE) AMATEUR RADIO OPERATION FROM THIS LOCATION IS IN SUPPORT OF A JOINT CANADIAN USSR POLAR SKI TREK VIA THE NORTH POLE. 9 SOVIET AND 4 CANADIAN SKIERS MAKE UP THE MOVING GROUP. OTHER COMMUNICATIONS SITES LOCATED AT DIXON ISLAND/USSR, RESOLUTE BAY/CANADA AND NP28, AN ICE ISLAND NEAR THE NORTH POLE, SUPPORT THE PROJECT. THE AIM OF THE SKI TREK IS TO JOIN THE TWO COUNTRIES BY A WALK TO SHOW HOW CLOSE THEY ARE AND HOW MUCH THE TWO NATIONS HAVE IN COMMON. MY PRESENCE HERE WITH RECIPROCAL OPERATING PRIVILEGES IS PART OF A VERY HISTORIC EVENT FOR THE SOVIET UNION AND FOR AMATEUR RADIO WITH THE FOLLOWING FIRSTS:

1ST THIRD PARTY AND RECIPROCAL LICENSING AGREEMENTS BY THE USSR. 1ST FOREIGN AMATEUR TO OPERATE INSIDE THE SOVIET ARCTIC CIRCLE. 1ST EVER PHONE PATCH TO OUTSIDE THE USSR AND DONE BY A NON-SOVIET AMATEUR. (VO1SA/UAØ WITH VO1CU)

OTHER FIRSTS BY A NON-SOVIET CITIZEN:

PACKET (RADIO) QSO VO1SA-1 TO RA3APR. CW SATELLITE QSO VO1SA/UAØ WITH CI8CW. SSB SATELLITE QSO CI8CW AND VO1SA/UAØ. (MY THANKS TO A MASTER SATELLITE MAN FOR HIS PATIENT INSTRUCTIONS IN THAT FIELD, (LEONID LABUTIN) EXØCR/UA3CR.) AERONAUTICAL MOBILE OPERATION BY A FOREIGN AMATEUR ONBOARD A SOVIET AIRCRAFT. APPROXIMATELY 40 SSB QSO'S MADE AS VO1SA/A.M. REGION 1 OVER SOVIET ARCTIC.

MANY OTHER FIRSTS RECORDED BUT (THEY ARE) TOO NUMEROUS TO MENTION HERE.

ON MARCH 29/88 I HAD THE PLEASURE OF ASSISTING IN THE PREPARATION OF, AND ATTENDING THE SECOND DROP TO THE SKI TREK. SKILLFUL FLYING BY THE AIRCRAFT CAPTAIN AND ACCURATE RELEASES BY THE DROP MASTER MADE FOR A VERY SUCCESSFUL AND EXCITING OPERATION. TEN PARACHUTE DESCENTS AND A FINAL LOW PASS OVER THE GROUP AND WE WERE CLIMBING TO 9000 METERS AND SETTING COURSE FOR SREDNIY ISLAND, THE AIRCRAFT EMPTY EXCEPT FOR A TELEVISION CREW AND US FEW PASSENGERS.

MANY RADIO, TELEVISION AND PRESS INTERVIEWS (TOOK PLACE) IN THIS COUNTRY DURING MY STAY. THERE IS MUCH INTEREST IN THIS FOREIGN (CANADIAN) AMATEUR RADIO OPERATOR WORKING IN THEIR HIGH ARCTIC WITH THE SAME PRIVILEGES AS A SOVIET CITIZEN. AMATEUR RADIO PLAYED A SIGNIFICANT ROLE IN SOME OF THESE STORIES AS TELEPHONE PATCHES WERE USED BETWEEN THE REPORTER AND THIS LOCATION.

IT WAS MOST INTERESTING TO VISIT THE SCIENTIFIC RESEARCH ICE DRIFTING STATION (ICE ISLAND), NORTH POLE 28, ON APRIL 2/88. THE LOCAT[ON OF 4KØDC, 4KØD AND FUTURE LOCATION OF 4KØDX. VE3CDX (BARRY GARRATT) WILL OPERATE THAT CALLSIGN FROM NP28 IN APRIL AND MAY OF 1988.

AS I DEPART, THIS APRIL 3RD DATE, 1988, I LEAVE WITH MANY MIXED EMOTIONS. I AM GLAD TO BE RETURNING TO MY HOME AND WAY OF LIFE IN ST. JOHN'S, NEWFOUNDLAND BUT ALSO VERY SAD TO BE LEAVING THE MANY KIND GENEROUS PEOPLE WHO BEFRIENDED THIS ONE CANASKI, WHO SPEAKS LITTLE TO NONE OF THEIR LANGUAGE, AND MADE ME FEEL WELCOME AT ALL TIMES. I SINCERELY HOPE THIS PROJECT IS ONLY A BEGINNING OF MANY SUCH EVENTS IN THE FUTURE OF AMATEUR RADIO. GOODBYE DEAR FRIENDS. DOS VEE DAH' NYA. 73 VO1SA/UAØ.

On April 8th the skiers reached 87 degrees north latitude with the Pole only 330 km to the north. Their lightened packs along with moderating temperatures and good ice conditions have allowed them to make excellent progress of late. The third air drop is scheduled to take place on Wednesday April 13th. The ''moving group'' as the skiers are known will arrive at the North Pole on or about April 24th. They will be joined by a number of dignitaries and press from Canada and the Soviet Union who will fly in, weather permitting. Barry Garratt, 4KØDX, will also be travelling to the Pole from Ice Island North Pole 28.

Transpolar Skitrek Progress Report #12 April 15, 1988

This past week the Amateur Radio supported Transpolar Skitrek Expedition rested following their third air drop of supplies on April 13th. As it dropped its load of food, fresh batteries and other items, the plane's inertial guidance registered a position of 88 degrees 11.5 minutes North and 97 degrees 7.0 minutes East. By Friday, April 15th the floe on which the skiers were camped had drifted westward to 91 degrees 41.2 minutes East. This was not a great distance, however, as longitude lines get closer together as the group approaches the Pole. The trek got underway again on April

16th.

The skiers remain in good health and excellent spirits as they approach the half-way point in their journey. The solitude of the last month-and-a-half on the ice will be broken about April 25th when they reach the North Pole and are greeted by 100 dignitaries and members of the press, flown in to an unprecedented press conference at the top of the world. Ice Island North Pole 28, itself less than 100 miles from the Pole, is serving as a logistics base for this event. Also joining the skiers at the Pole will be 4KØDX/VE3CDX, Barry Garratt and EKØCR/UA3CR, Leonid Labutin, key amateur radio operators involved in expedition communications operations.

Several schools following the trek have asked about the clothing the skiers are wearing. They put on 3 pairs of socks each day, made of first a synthetic fiber, then wool, then another synthetic outer pair. They wear thermal long underwear and special fiber-filled snow suits. Parkas with hoods, gloves, special ski boots, face masks and goggles complete their outfits. Even with all this protection the skiers faces have scabs formed over frostbitten skin. They will not be a particularly pretty sight to the press, seeing a polar expedition in progress for the first time. The injured skin will soon return to normal when they complete their trek. Soon after the polar meeting, the skiers will press on towards Ellesmere Island, which they hope to reach by June 1st. For those wishing to place North Pole 28 on their maps, its position on April 12 was 89 degrees 7 minutes North and 180 degrees E.

The Transpolar Skitrek Expedition is described in a display at the Ontario Science Center in Toronto. The display features photos of previous Soviet Expeditions on loan from Expedition Leader Dr. Dimitri Shparo. Expedition activities portrayed include scaling a pressure ridge, crossing leads in rubber boats piled high with skis and people, preparing a meal and position finding by "shooting the sun". Exhibit visitors can listen to the Digitalker relate the skiers' latest position via a handset and see the position marked on a handsome polar projection map. A well mounted turnstile reflector antenna on the roof of the Science Center is used for UO-11 reception.

Michael Meerman of the UoSAT Control Center reports that he receives daily positions for the skiers from EXØCR via packet or voice around 1200 UTC and that he then programs the UO-11 Digitalker around 1800 UTC each day as it passes over Surrey. Position reports that originate around 1000 UTC have allowed earlier programming, however, so trek followers are advised to listen to both morning and evening passes to catch the latest position updates. The beacon frequency of UoSAT is 145.825 MHz.

This report is prepared for use with AMSAT's Teacher's Guide, "Exploring The High Arctic From Your Classroom" A continuing series of Progress Reports like this one may be accessed via packet BBS, AMSAT Nets and the main educator source, the WØRPK AMSAT Bulletin Board (1-515-961-3325).

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- The Dayton Hamvention is drawing near (April 29, 30, May 1). Field Operations VP Doug Loughmiller, KO5I, is organizing this year's event for AMSAT together with a strong team from Ohio and elsewhere. Extensive forums are planned. The new AMSAT Phase 3C poster will premier and new software will be running. Chairman Jan King, W3GEY, will be giving a last minute update on Phase 3C and may have some exciting videotape footage of the current activity in Kourou. See you there!
- AMSAT Phase 3C ads showing the Bill Hans painting are scheduled to debut in the June issue of several of the popular ham magazines including QST. Watch for them.

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LM-1096 KA6M 99.81
MAGNUSKI, HANK
2019 BARBARA DR.
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Amateur Satellite Report (ISSN 0889-6089) is published biweekly for $16 (inseparable from annual membership dues of $24) by AMSAT, Post Office Box 27, Washington, DC 20044. Second class postage paid at Silver Spring, MD and additional mailing offices. POSTMASTER: send address changes to *Amateur Satellite Report*, Post Office Box 27, Washington, DC 20044.